







**Smith, Andrew.** *Illustrations of the Zoology of South Africa,*  
*London, 1838*

These illustrations consist chiefly of figures and descriptions of the objects of natural history collected during an expedition into the interior of South Africa in the years 1834, 1835, and 1836, fitted out by "The Cape of Good Hope Association for Exploring Central Africa" together with a summary of African zoology and an inquiry into the geographical ranges of species in that quarter of the globe.





No. I.]

[PRICE 10s.]

ILLUSTRATIONS  
OF THE  
ZOOLOGY OF SOUTH AFRICA;

CONSISTING CHIEFLY OF  
FIGURES AND DESCRIPTIONS OF THE OBJECTS OF NATURAL HISTORY

COLLECTED DURING  
AN EXPEDITION INTO THE INTERIOR OF SOUTH AFRICA,

IN THE YEARS 1834, 1835, AND 1836;

FITTED OUT BY  
"THE CAPE OF GOOD HOPE ASSOCIATION FOR EXPLORING CENTRAL AFRICA:"

TOGETHER WITH  
A SUMMARY OF AFRICAN ZOOLOGY,  
AND AN INQUIRY INTO THE GEOGRAPHICAL RANGES OF SPECIES  
IN THAT QUARTER OF THE GLOBE.

BY ANDREW SMITH, M.D.,  
SURGEON TO THE FORCES, AND DIRECTOR OF THE EXPEDITION.

Published under the Authority of the Lords Commissioners of Her Majesty's Treasury.

LONDON:  
SMITH, ELDER AND CO. CORNHILL.

MDCCCXXXVIII.







# ILLUSTRATIONS

## ZOOLOGY OF SCOTLAND

BY THE REV. JAMES H. BUCHANAN

OF THE UNIVERSITY OF GLASGOW

GLASGOW: JAMES BUCHANAN

1841

PRINTED BY JAMES BUCHANAN

GLASGOW: JAMES BUCHANAN

1841

# ALLEGATIONS

## OF THE SOUTH AFRICAN

THE SOUTH AFRICAN

1895

THE SOUTH AFRICAN

THE SOUTH AFRICAN

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[*Temporary Title.*]

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## Prospectus of "THE ZOOLOGY OF SOUTH AFRICA."

THE Cape of Good Hope is now acknowledged to be one of the greatest avenues as yet opened for the researches of the Naturalist. Our Colony in that part of Southern Africa is the key to a large portion of an extensive continent which is still but very partially explored; and the field to which it admits the scientific traveller is rich to exuberance in the variety and novelty, both of animal and vegetable life.

Stimulated by the prospect of Discovery in a quarter so fertile in interest, "*The Cape of Good Hope Association for Exploring Central Africa*" was established in 1833; and in 1836, an Expedition fitted out by that body, consisting of thirty-four persons, and directed by Dr. Smith, after an absence of nineteen months, and penetrating as far as 23° 28' South latitude, returned to Cape Town laden with a variety of curious and important specimens in Natural History, &c.

Previously to this period little information has been furnished, in a shape calculated to enable the public to form accurate ideas of the various animated beings by which these regions are inhabited. The splendid publication of Le Vaillant, no doubt, should be mentioned as forming an exception, *pro tanto*; but this includes only a portion of the Birds of the most southern extremity of the country, and a work therefore extensive enough to comprehend the various departments of Zoology is still a desideratum.

The Members of *The Cape of Good Hope Association for Exploring Central Africa* found themselves, on the return of the recent Expedition, in a situation to supply at least some portion of the existing deficiencies; but their funds, even if it had been possible to divert them to such an object, were altogether inadequate to defray the expense of laying the result of their labours before the world. Under such circumstances, it was decided that Dr. Smith, the director of the Expedition, should be authorised, on his arrival in England, to wait upon Lord Glenelg, for the purpose of making him acquainted with the position and views of the Society, in the hope that Government might be induced to assist in the publication of their materials.

This hope has not been disappointed. At the recommendation of the Secretary of State for the Colonial Department, the Lords Commissioners of Her Majesty's Treasury have been pleased, by a pecuniary grant, to enable the Society to publish the result of its labours, without infringing upon the funds raised solely for the purposes of discovery; and in a form which, while it places the work within reach of most of the friends and promoters of science, will not, it is hoped, be found inconsistent with the interest and importance of the subject.

The materials for the work now offered, under such patronage, to the public, will consist of pictorial illustrations of between three and four hundred subjects of the animal kingdom, all of which have been collected to the south of 23° 28' South latitude; and will comprise,

First, and principally, unknown animals;

Secondly, animals known, but not yet figured; and

Lastly, such as have been imperfectly figured; but of which the Society is in possession of accurate drawings.

The Entomological portion of the work will be from the pen of W. S. Macleay, Esq., who has kindly undertaken that department. The rest of the descriptions will be furnished by Dr. Smith, who will add a summary of African Zoology, and an inquiry into the Geographical ranges of species in that quarter of the Globe.

### Conditions of Publication.

The Work will appear in periodical parts, price ten shillings each; and it is estimated that it will be completed in about thirty-four parts. As it will be necessary that the plates be published promiscuously, they will be arranged in five divisions, viz. MAMMALIA, AVES, PISCES, REPTILIA, and INVERTEBRATE. The plates of each of these divisions will be numbered independently, and the letter-press descriptions left unpagged, so that on the work being completed, they may be arranged either agreeably to the general classified order which will accompany the last number, or according to the particular views of the purchasers.









RHINOCEROS KEITLOA  
(Mammalia Platel)







## RHINOCEROS KEITLOA.—SMITH.

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### MAMMALIA.—PLATE I. (MALE.)

Rh. pallidè brunneo-flavus; cornubus duobus longitudine subæqualibus; anteriore cylindrico, posteriore compresso; labii superioris parte anteriore productâ acuminatâ.

LONGITUDO corporis cum capite 11 ped.  $1\frac{1}{2}$  unc., caudæ 26 unc., cornuorum 21 unc. — ALTITUDO 5 pedes.

RHINOCEROS KEITLOA—Rep. of Exped. page 44. June 1836.

COLOUR.—Pale brownish yellow, the brown most distinct upon the head; the inner sides of the extremities towards the body and the groins somewhat flesh-coloured; the inner sides of the knee joints and the hinder part of the thighs immediately above the joints pale livid black. Eyes dark brown. Horns dark greenish brown.

FORM, &c.—Figure nearly that of *Rhinoceros Bicornis*, Auct. Skin destitute of hair, rough and slightly irregular, the surface exhibiting a reticulated appearance, arising from the number of waved or angular fissures by which it is every where impressed, but more particularly upon the shoulders and outer surfaces of the hinder extremities. The lower portion of the neck is marked by several wide vertical furrows, which admit of the head being turned to either side with greater facility; several of a much smaller size also occur towards the extremity of the muzzle and around the eyes, evidently for the purpose of admitting the upper lip and the eyelids to be moved with greater freedom. Head moderately slender; the eyes very small, and sunk in the orbits; the nostrils are situated near to the extremity of the muzzle, of a somewhat oval form, and rather oblique in relation to the axis of the head. The anterior horn nearly cylindrical, the basal half directed forwards, the distal half slightly curved backwards; the posterior horn towards its base nearly cylindrical, with the distal two-thirds laterally compressed, and having the hindermost edge thinnest. Ears somewhat acuminate, edged with short hair towards their tips; legs rather short; knee joints very large; scarcely any hunch on the shoulders; the neck rather long. Tail cylindrical till

# RHINOCEROS KEITLOA.

within a few inches of its extremity, then laterally compressed and margined above and below by strong, short and wiry hair.

## DIMENSIONS.

	Feet. Inches.			Feet. Inches.	
Length from the tip of the nose to the			Length of the anterior horn, following		
base of the tail .....	11	1½	the curve .....	1	9¼
of the tail .....	2	2	of the posterior horn.....	1	9
from the tip of the nose to the			Height at the shoulder .....	5	0
hinder edge of the occiput..	2	7½	at the crupper .....	4	10
from the hinder edge of the			Circumference at the middle of the		
nostril to the eye .....	0	11¼	belly .....	9	8
from the eye to the ear.....	0	11¼			

The only species yet known with which the present could be confounded, is the *Rhinoceros Bicornis* of authors. Between them, however, many well marked differences are to be discovered ; but as it is our intention to enter more at length on that subject in the Appendix, we shall only here particularise a few of the external and more palpable ones. In the *Rh. Keitloa*, the two horns are of equal, or nearly equal length ; in *Rh. Africanus*, the posterior, in neither sex, is ever much beyond a third of the length of the anterior horn ; the length of the head, in proportion to the depth, is very different in the two. The neck of the new species is much longer than that of the other, and the position and character of the cuticular furrows, destined to facilitate the lateral motions of the head, are very different. Besides these, many other diagnostic characters might be instanced ; such as the black mark on the inside of the thigh of *Keitloa*,—the distinctly produced tip of the upper lip ; and the comparatively few wrinkles on the snout and parts around the eyes, when compared with those on the same places in *Rh. Bicornis*, as will be seen by comparing the representation of the present species with the next plate.

Considering the acumen which savages display in detecting differences between animals nearly related, we may, with propriety, infer that the Keitloa has not, at least for many years, been in the habit of generally extending his range higher than about 25° south latitude.\* The natives at and around Latakoo are only acquainted with two species, viz. Borili (*Rhinoceros Bicornis*, Auct.) and Mohoohoo (*Rhinoceros Simus*, Burch.) ; and those who were in our employ declared, when they first saw the *Keitloa*, that it was not an animal of their country ; and at once enlarged upon the points in which it differed from Borili. During the discussion, an intelligent Moharotsi, who was well acquainted with the animal, approached,—called him by his name, and referred us to districts where we should find specimens in abundance. As he stated, it happened ;

\* That individuals of this species have approached Latakoo, or rather the country some sixty miles to the north of it, we have sufficient evidence in the fact that Mr. Burchell, whose merits as a traveller can be best appreciated by those who follow him in the same field, is at present in possession of the horns of an individual which was killed by his hunters.

## RHINOCEROS KEITLOA.

though every where the species appeared rare when compared with the others ; and, after several months' wanderings, it was found that only sixty-eight individuals had been seen, eight of which in one herd, (two of them, not more than half grown,) were disturbed by myself when feeding near to the banks of a river we were descending. According to the evidence of the natives, the *Keitloa* is of a very savage disposition, on which account it is more feared than *Borili*, which has also a character for ferocity. Its food consists of small shrubs, or the more delicate branches of brushwood, in collecting which, the prolongation of the anterior extremity of the upper lip proves a useful assistant. For a more detailed account of the manners and habits of this species, we may refer to the Appendix hereafter to be published.

While in the neighbourhood of the Tropic, we heard of two other species of the genus, which exist still farther to the northward ; but, unfortunately, could not obtain any very circumstantial evidence concerning them, as the persons who had seen them were only on a visit in the country they inhabit. One of them was stated to approximate the *Keitloa* ; the other was described as very different to any species previously seen by them, and to have only one long horn towards the forehead. Now, though descriptions of objects furnished by such persons are often inaccurate, from the circumstance of their not having been favourably situated for making correct observations, as well as from a deficiency of language calculated to convey the information they actually possess, I have always remarked that even a hasty examination seemed to supply the savage with more accurate notions of the general characters of animals than it did the civilized man, and therefore I do not despair of species such as they mentioned being yet discovered.

It is in regard to the species with the single horn, that we experience the greatest hesitation in receiving their evidence as credible, and, therefore, it is agreeable to have it corroborated by the testimony of a man from a very different part of the country, as obtained and published by a missionary of great research who resided a long time in Madagascar. The individual who furnished Mr. Freeman with the account of the *Ndzoo-dzoo*, was a native of the country northward of Mozambique, and if we admit certain portions of the descriptions to be tainted with errors, we can recognise in the remainder the genuine habits of a Rhinoceros, and probably one of the species, with which our informants were slightly acquainted.

"It appears," observes Mr. Freeman, "that the *Ndzoo-dzoo* is by *no means* rare in Makooa. It is about the *size of a horse*, extremely *fleet* and *strong*. It has *one single horn* projecting from its forehead, from twenty-four to thirty inches in length. This is flexible when the animal is asleep ; it can be curled like the trunk of the Elephant, but becomes perfectly firm and hard when the animal is excited, and especially when pursuing an enemy. Its disposition is extremely *fierce*, and it universally *attacks* man if it sees him. The usual method of escape adopted by the natives is, to climb up a dense and high tree, so as to avoid, if possible, being seen. If the animal misses his sight of the fugitive, he immediately gallops off to his haunt ; from whence it may be inferred that he is not endowed with the power of a keen scent. Should he, however, espy his object in the tree, woe to the unfortunate native,—he begins to *butt with his horns*,—strikes and penetrates the tree, and continues piercing it till it falls, when his victim seldom escapes being gored to death. Unless the tree is of a large girth, he never fails in breaking it down. Having killed his victim, he leaves him without devouring the carcase. The male only is provided with the horn. The female has not anything of the kind."\*

\* South African Christian Recorder, Vol. i. p. 33.

## RHINOCEROS KEITLOA.

With respect to the other Rhinoceros which was said to exhibit a resemblance to the Keitloa, it may probably be found to belong to a species which has its principal *habitat* in northern Africa, a conclusion to which we have been led from an examination of a pair of horns contained in the museum of the College of Surgeons of London, and which were obtained in Abyssinia, by Mr. Salt. These horns differ considerably from the horns of *Rh. Bicornis*, while as regards form, they approximate those of *Rh. Keitloa*. Another pair of horns, probably of the same species, is preserved according to Spaarman,\* in the cabinet of the Royal Academy of Sciences, the foremost of which is twenty-two inches in length, and the hindermost sixteen. The distance between these horns is scarcely two inches. They differ likewise, he adds, "from the horns I saw in Africa, and from those I brought with me, in being of a lighter colour, and straight, and at the same time flat on the sides; so that the hindmost horn in particular, has pretty sharp edges on the upper part, both before and behind. These horns most probably came from the northern parts of Africa, as they were purchased at Naples," &c. Different again from the above, and from all Rhinoceros horns I have yet seen are two, contained in the British Museum, which were obtained by Major Denham during his journey in Northern Africa; and if they do not prove to have belonged to young individuals of *Rh. Simus*, they will require to be referred to a species not yet characterised; they are of a lighter colour than any horns which I have had an opportunity of examining, and along with a peculiarly corneous aspect, they have a considerable degree of semi-transparency. The horns of *Rh. Simus* possess more of the above characters than any others yet known, which circumstance, together with the fact of which I have been informed by R. Owen, Esq. F.R.S. that clubs of Rhinoceros horn, about three feet in length have been obtained from Western Africa, (Kingdom of Dahomy) would lead to a supposition, that either the species discovered by Burchell, or one with certain of its characters, inhabits Northern Africa.

Now, though I am not prepared to maintain that the horns of each individual of the same species of Rhinoceros are found to be uniform, as regards size and form, or even that the relative lengths of the first and second horns are constant in different animals, yet from what I have observed in the South African species, I do not think we are justified in believing the horns of the same species to be subject to any great variations in respect to relative length. When the Rhinoceros of Abyssinia shall have been minutely examined, it will probably be found to be distinct from *Rhinoceros Bicornis*, Lin., and be identical with the animal stated by the natives who communicated with us near the tropic of Capricorn, to be like the *Keitloa*. The other species of which they spoke will possibly be identical with the Ndzoo-dzoo and a nondescript: while the one, from which were obtained the horns referred to as in the British Museum, may prove either the *Rhinoceros Simus*, or a third undescribed species.

\* Voyage to the Cape of Good Hope, by A. Spaarman, M.D. 4to. vol. ii. p. 100.







RHINOCEROS BICORNIS.  
Mammalia. (Plate 2.)





## RHINOCEROS BICORNIS.—LIN.

### MAMMALIA.—PLATE II.—(FEMALE AND YOUNG.)

*R. pallidé flavo-brunneus*, cornubus longitudine inæqualibus; collo ad caput sulco circumdato; oculis brunneis.

LONGITUDO 10 ped. 11. unc.

RHINOCEROS AFRICANUS, Cuv. Reg. Animal.

**COLOUR.**—Pale yellowish brown, with tints of purple upon the sides of the head and the muzzle; the groins flesh-coloured; eyes dark brown; the horns livid brown, clouded with green; the hair on the tip of the tail and the margins of the ears deep black.

**FORM, &c.**—Head rather deep in proportion to its length, which gives it an appearance of clumsiness beyond either of the other South African species; the anterior horn directly over the extremity of the nose, the first half nearly perpendicular, the last half slightly curved backwards; the posterior horn conical, and often exhibiting an appearance as if the point of a smaller sized cone had been fixed upon the section of a larger one, which observation to a certain extent might also be applied to the front horn; towards their bases both are rough, and more or less distinctly fibrous; towards the points hard, smooth, and finely polished. Eyes small; the skin surrounding them as well as that in front of the ears and on the muzzle and the upper and lower lips, deeply cut by narrow wrinkles; the extremity of the upper lip scarcely produced. The neck is thick, short, and at its junction with the head encircled by a deep furrow formed in the skin; the shoulder with a rudimentary hunch; the body round and heavy; limbs rather shorter in proportion than in *R. Keitloa*. Tail flattened towards the extremity, elsewhere somewhat cylindrical; the upper and lower edges near the tip fringed with thick wiry hair. The surface of the skin rather rougher than in the species last described, owing to its being intersected by a greater number of wrinkles.

#### DIMENSIONS.

	Feet. Inches.			Feet. Inches.	
Length from nose to root of tail .....	10	11	Length of anterior horn.....	1	7
Height at the shoulder .....	4	10	of posterior horn .....	0	6½

The relative lengths of the horns vary a little in different individuals, but the hindermost one in both sexes is invariably much the shortest, and in

## RHINOCEROS BICORNIS.

young specimens it is scarcely visible when the other is several inches in length. In the *Rhinoceros Keitloa*, again, the young have both horns of equal length.

The present species, under the name of *Rhinoster*, has been familiarly known to the colonists of the Cape of Good Hope ever since 1652. In that year, when the Dutch first formed their settlement on the shores of Table Bay, this animal was a regular inhabitant of the thickets which clothed the lower slopes of Table Mountain. The abandonment of those spots by this animal as a measure of safety, probably constituted the commencement of a forced migration, which has continued to extend ever since, and which has led not only to the disappearance of the species from the districts within the present colonial limits, but also in a great measure to its removal from countries beyond those limits, as far as hunters efficiently armed are accustomed to resort. If a system, such as has hitherto prevailed, continues to exist, and the larger animals persevere in flying to avoid the effects of fire-arms, the time may arrive when the various species which formerly may have been scattered, each, in a peculiar locality of a large continent, will be huddled together; and indeed an advance towards that period is in progress, as may be inferred from the concentration which is at present taking place in the interior of South Africa. Though many of the individuals which inhabited the countries where now not a single Rhinoceros is to be seen, were doubtless destroyed, yet it is equally certain that many others escaped, and thereby assisted in adding to the accumulation which is in progress in other localities. Until lately the present was the only species of the genus which was known to be receding from its native country, but of late another has been led to a like course; and the *Rhinoceros Simus* which but a few years ago was common in the neighbourhood of Latakoo, has, since the more general introduction of fire-arms into that country, almost entirely ceased to approach within a hundred miles of it. From a consideration of the various facts which we have collected in relation to the species now under consideration, and which we shall detail more at length elsewhere, we feel disposed to regard it to a certain extent as a prisoner in the country it now inhabits, and are inclined to believe the southern extremity of the continent, and the country along the western coast towards Benguela to have once formed its favourite residence.

Like the *Keitloa*, this species feeds upon brushwood and the smaller branches of dwarf-trees, from which circumstance it is invariably found frequenting wooded districts, and in those situations its course may often be traced by remarking the mutilations of the bushes. As it feeds but slowly, and besides passes much of its time in idleness, it must be regarded as a very moderate eater, and considering it appears to be fastidious in the choice of its food, it is fortunate for its comfort that it does not require more nourishment. Of the many shrubs which exist in the localities in which it resides, few comparatively appear formed for its choice, as it is to be seen approaching many and leaving them again without either injuring a branch or plucking a leaf. This evident nicety in the selection of its aliment makes it difficult to imagine how so many large animals as are sometimes congregated together within a very limited space can find sufficient for their consumption. Even admitting that the reproduction of the parts which the Rhinoceros may devour takes place with uncommon rapidity in the climates they inhabit, and consequently the shrubs are comparatively soon in a condition to supply another meal, yet nevertheless, if these animals consumed in proportion to their bulk, they would of necessity be forced to be less particular in the choice of their food.



General Information

This report is submitted to the Board of Directors of the Company for their review and approval. It contains a summary of the financial performance of the Company for the year ended December 31, 1999.

The Company's financial performance for the year ended December 31, 1999, was satisfactory. The Company's revenue increased by 10% over the previous year, and its net income increased by 15%.

The Company's assets increased by 5% over the previous year, and its liabilities decreased by 2%.

The Company's cash and cash equivalents increased by 10% over the previous year.

The Company's capital expenditures were \$100,000, which was a decrease of 20% over the previous year.

The Company's operating expenses were \$200,000, which was an increase of 5% over the previous year.

The Company's net income was \$150,000, which was an increase of 15% over the previous year.

The Company's revenue was \$1,000,000, which was an increase of 10% over the previous year.

The Company's assets were \$1,000,000, which was an increase of 5% over the previous year.

The Company's liabilities were \$500,000, which was a decrease of 2% over the previous year.

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The Company's liabilities were \$500,000, which was a decrease of 2% over the previous year.

The Company's cash and cash equivalents were \$200,000, which was an increase of 10% over the previous year.



FALCO SEMITORQUATUS

( Avis —Plate L. )

*Illustrated by the Queen*





## FALCO SEMITORQUATUS.—SMITH.

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### AVES.—PLATE I. (MALE.)

F. parte superiori capitis, dorso, humerisque cineraceis; capitis lateribus, fasciâ cervicali, tectricibus superioribus caudæ, partibusque inferioribus albis; remigibus rectricibusque brunneo-nigris maculis albis in seriebus transversis variegatis; rostro ad basin, cerâ, pedibusque flavis; rostri apice, unguibusque nigris; oculis flavis.

LONGITUDO 7 unc.

FALCO SEMITORQUATUS, Rep. of Exped. page 44. June 1836.

**COLOUR.**—The upper part of the head, the back, the secondary quill coverts and a few of the innermost tertiary quill feathers cinereous or ashy blue; the sides of the head a broad transverse band on the back of the neck, the upper tail coverts, and all the under parts pure white. Primary quill coverts, quill feathers and tail dull brown or brownish black, freely variegated with white spots. On the quill feathers, the spots on the outer vanes consist of somewhat circular or semicircular blotches, on the inner vanes of more or less lengthened transverse bars, the latter more numerous than the former, which are generally four on each web, except in the case of the first primary, which is often spotless. On the tail the forms of the white spots are somewhat similar to what they are upon the wing feathers, and the number upon each vane is generally equal, commonly five, so that when the feathers are spread, it appears crossed by that number of interrupted white bars; both the quill and tail feathers tipped with white. Cere, basal half of bill, legs and toes yellow, distal half of bill livid blue, with the extreme tip nearly black; claws black; eyes yellow.

**FORM, &c.**—Bill rather compressed, and the point of the upper mandible much hooked. Tarsi and toes moderately strong for the size of the bird, the former covered in front by entire or divided plates, behind and on the sides by scales. Claws much curved; wings when closed reach nearly over the first two-

# FALCO SEMITORQUATUS.

thirds of the tail ; second quill feather longest ; first and third nearly equal, and rather shorter than the second ; the extremity of the tail slightly rounded.

## DIMENSIONS.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the			Length of the tarsus.....	1	1
end of the tail.....	7	0	Length of middle toe.....	0	9
of the bill from the angle of the			Length of hinder toe.....	0	4½
mouth.....	0	9			
of the wings when folded. ....	4	3			
of the tail.....	3	0			

In the *female*, the scapulars and the back are deep chesnut brown ; in other respects the colours are similar to those of the male. In point of size there is a little difference, the female being nearly eight inches and a half in length.

Only three specimens of this elegant little Falcon were procured by the expedition party, and those nearly in the same spot, among some large mimosa trees a little to the eastward of Old Latakoo. None of them were ever observed soaring like other falcons, and the few individuals that were seen were either perched upon the lowermost branches of the trees, or in the act of flying from one tree to another. Considering that this bird was never afterwards procured or even seen more to the eastward, it is probable that the proper habitat of the species will be found in the opposite direction, which I am the more inclined to believe, as one of our party declared he had seen it upon the borders of the Kalahari desert during an excursion we made to the westward of New Latakoo. In the stomachs of two were found the remains of small birds, and in the third, portions of a lizard, and different parts of coleopterous insects.

If we are to admit Le Faucon à calotte noir of Levaillant, Ois. d'Afrique, pl. 29, (*Falco tibialis*, Daud.) to be a native of South Africa, we have now eight species of true Falcons inhabiting that part of the globe ; viz.

*Falco rupicolus*, Daud.  
*rupicoloides*, Smith.  
*biarmicus*, Temm.  
*peregrinus*, Lin.

*Falco tibialis*, Daud.  
*Chicquera*, Le Valliant.  
*Subbuteo*, Lin.  
*semitorquatus*, Smith.

The four species in the first column occur in almost every district of the country which has yet been explored ; the fifth species, if it has a place in South Africa, must be very confined in its range, as I have never either met it myself, nor seen it in collections made by others. The sixth species was for the first time discovered during the movements of the expedition between the principal branches of the Orange river, and it was not until that discovery I could persuade myself that Levaillant had correctly ranked it as an African bird. The seventh is rarely procured, and I have never seen specimens at any great distance from Cape Town. The eighth probably never reaches the latitude of the colony.

# MEMORANDUM

TO : The President

FROM : The Vice President

SUBJECT: [Illegible]

[Illegible text block]

[Illegible text block]

[Illegible text block]

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CHIZIERHIS CONCOLOR  
(Aves — Plate 2.)

*Drawn by H. S. G. L. 1870*







## CHIZÆRHIS CONCOLOR.—SMITH.

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### AVES.—PLATE II. (MALE.)

*C. cinereo-griseus brunneo-tinctus*; humeris scapularibusque cupreo-viridi umbratis; remigibus viridi-brunneis; caudâ viridi-griseâ; rostro pedibusque nigris; capite cristato, cristæ plumis decompositis e fronte porrectis.

LONGITUDO 20 unc.

COLIPHIMUS CONCOLOR, Rep. of Exped. page 54, June 1836.

**COLOUR.**—Dull ashy, or smoke-grey, tinted with brown; the scapulars and shoulders variegated by greenish shades, exhibiting a metallic lustre. Bastard wings, primary quill coverts, and quill feathers, greenish brown; the green most distinct upon the inner vanes; the outer vanes of secondary quill feathers greenish grey, the inner deep green, with a metallic gloss. Tail above glossy greenish grey, except towards the extremity, where it is deep greenish brown, beneath greenish brown with a brassy tint. Bill and claws black; tarsi and toes livid brown. Eyes dark brown.

**FORM, &c.**—Bill compressed, higher than broad at the base, and its height nearly equal to its length; culmen slightly rounded and arched from the base; the tip of the upper mandible pointed and somewhat hooked, with a slight emargination immediately behind it; commissure slightly sinuated; nostrils small, pierced in the bill, close to the culmen and a little in front of the feathers of the forehead, with a distinct narrow groove extending from each, obliquely downwards and forwards towards the commissure. Wings, when folded, reach over the first third of the tail; fourth and fifth quill feathers longest, and slightly exceeding the third and sixth; the second considerably shorter than the third, and the first not half the length of the fourth. Tarsi and toes moderately robust, the former covered in front by transverse plates, behind and on the sides by minute granular scales. Claws moderately curved. Head surmounted by a long crest, which extends obliquely upwards and

# CHIZÆRHIS CONCOLOR.

backwards from the forehead, and is formed of the elongated feathers of that part with their vanes much decomposed.

## DIMENSIONS.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the			Length of the tarsus .....	1	9
extremity of the tail.....	20	3	of the middle toe .....	1	3
of the bill .....	0	11	of the hinder toe .....	0	3½
of the wings when folded.....	8	6			
of the tail .....	10	0			

The female scarcely differs either in colour or size from the male.

It was upon reaching 25° 24' south latitude, a point where the rivers began to flow to the eastward, and the country to acquire a partial clothing of dwarf trees and brushwood, that this species was first discovered. As soon as it was observed, the Hottentots declared it to be a *muissvogel*, or *Colius*, Lin., and they persisted ever afterwards in regarding it as such, which was not surprising, since it evinces considerable similarity to birds of that genus, not only in its carriage when perched, but also in its mode of flight and in various other points which will be noticed more at length hereafter. Its favourite resort seemed to be the immediate banks of rivers, and it was seen either perched upon the highest branches of the trees which occurred in these situations, or flitting to and fro among them in search of the fruits, which constitute its principal food. It is a bird of short flight, and when disturbed and driven from any particular haunt, it seldom passes the nearest tree without alighting, unless it may think itself not sufficiently removed from the source of danger. When flying, it sometimes flaps its wings with considerable quickness and vigour, but more generally it soars along with them completely extended, and even scarcely moves them until it has actually perched. When at rest, and without any suspicion of danger, it has a clumsy dull appearance, with its head sunk to its shoulders, and at such times utters occasionally a harsh cry resembling “*mea*.” When excited, however, by the appearance of an object of suspicion, or its attention is arrested by any unusual noise, it exhibits a very opposite and elegant appearance: its crest, which in a state of rest is generally recumbent, then becomes erected, while its head, if not its whole body, is moved in various directions, as if endeavouring to discover the cause of its alarm; and at such times its cries are harsher and more frequent. The individuals first discovered were extremely shy and watchful, but as we advanced in the country, where specimens were more abundant, less caution was observed, and there were days when we might have shot at least forty or fifty individuals had it been desirable. Besides the remains of fruits, the wings and other parts of grylli were found in the stomachs of several which were examined.

When first I became acquainted with this bird I was inclined to consider it as forming a type for a new genus, which I proposed to call *Coliphimus*. Since my return to Europe, however, I have had opportunities of comparing it with *Chizærhis* of Wagler, and not having found sufficient peculiarities to warrant its being regarded apart from that genus, the name by which it was originally designated is consequently discontinued.





PTEROCLES GUTTURALIS .  
(Aves—Plate 5.)







## PTEROCLES GUTTURALIS.—SMITH.

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### AVES.—PLATE III. (MALE.)

*Mas.* P. capite, collo, pectoreque pallidè sulphureo-viridibus; scapularibus interscapularibusque griseo rubri-brunneo nigro-brunneoque umbratis; gulâ stramineâ postice fasciâ brunneo-nigrâ marginatâ; alarum tectricibus secundariis subrutilis; abdomine castaneo dîo; remigibus fuscis, secundariis versus apicem albo-marginatis.

*Fem.* capite, cervice, dorso, humeris pectoreque brunneo-nigris, subochreo variegatis; gulâ, gutture, collique lateribus pallidè brunneo-flavis; abdomine nigro badio-fasciato; caudæ tectricibus inferioribus badiis, versus basin nigro-fasciatis.

**COLOUR.**—The upper surface of the head dull green, faintly freckled with black; the sides of the head and the chin straw yellow; eye-brows yellowish white; space between eye and bill black; the neck, the breast, and a portion of each shoulder, intermediate between oil green and sulphur yellow; the bases of all the feathers pearl-grey; immediately behind the yellow of chin, the throat and sides of the neck are crossed by a deep brownish black crescent. The interscapulars and scapulars clouded with pale reddish brown, pearl-grey, and bluish black, or brownish black, the latter generally prevailing towards the quills. Back and upper tail coverts pearly grey, strongly tinged with brown, and when the feathers are separated, each is found of a yellowish brown tint at the base, and with a strong satin lustre. The secondary wing coverts intermediate between Dutch and reddish orange, with the base, and a considerable portion of the inner vane of each pearly-grey; primary wing coverts, and all the quill feathers, umber-brown; the secondaries narrowly tipped with rusty white; the tail feathers blackish brown, the outer vanes edged with pearl-grey, and all, except the two middle ones, broadly tipped with the same colour as the secondary quill coverts. Belly and under tail coverts, between chesnut and reddish brown. Bill and claws a dark horn-colour; eyes dark brown; toes greenish brown.

**FORM, &c.**—Typical; wings, when folded, nearly reach the tip of the tail; the first quill feather rather longer than the second; the longest of the tertiaries intermediate between the sixth and seventh quill feathers; tail, wedge-shaped, the two middle feathers rather the longest, and acuminate at their extremities; the outer and inner toes of equal length.

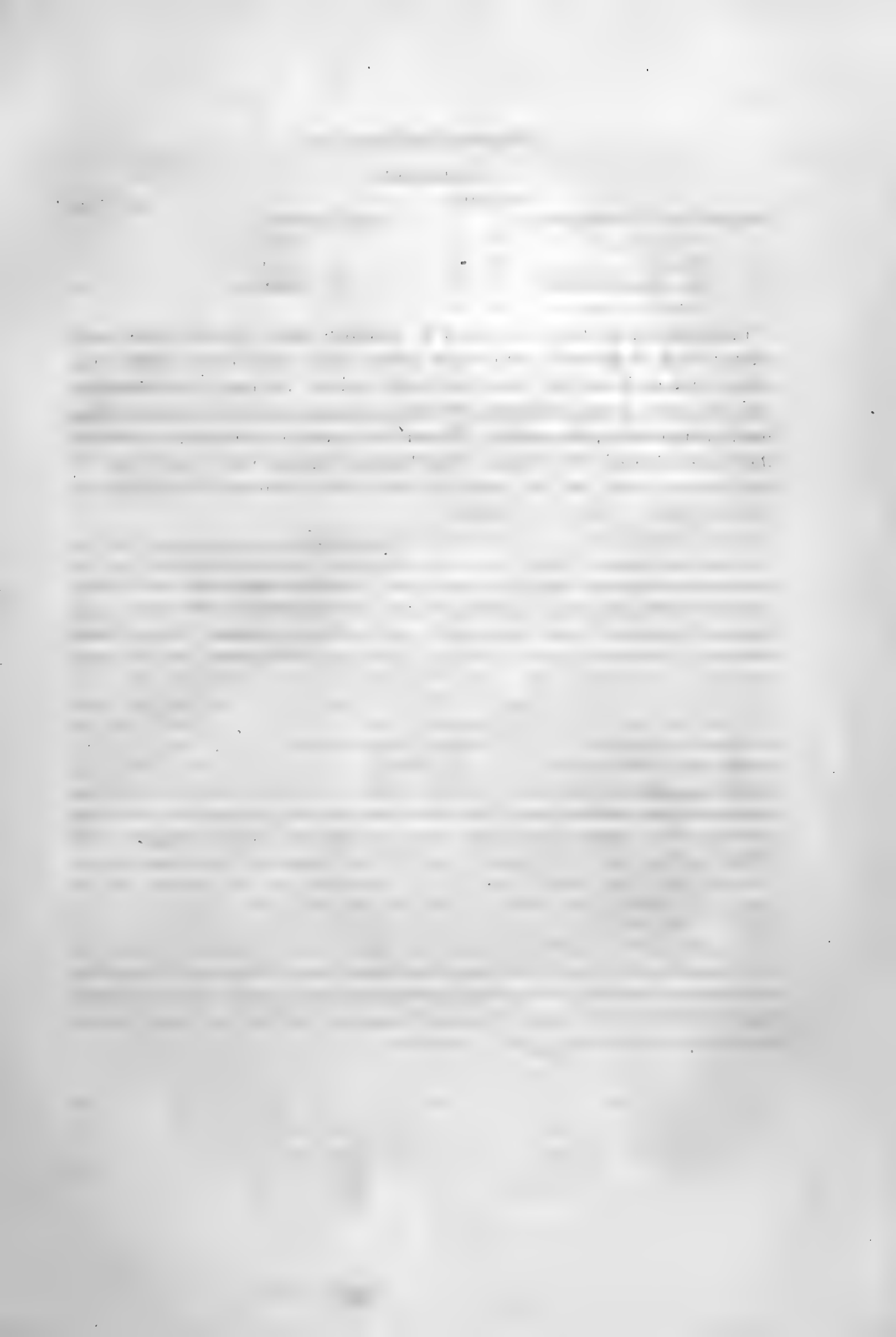
# PTEROCLES GUTTURALIS.

## DIMENSIONS.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of bill to the end			Length of the tarsus .....	1	1
of the tail .....	12	6	middle toe .....	1	0
of the tail .....	0	10	outer toe .....	0	9
of the wings when folded .....	8	9	hinder toe .....	0	1½
of the tail .....	4	3			

In the *female*, the top of the head is brownish black, spotted with rusty white ; back of the neck, dull cream yellow, freely dashed with brown ; the sides of the neck and the throat pale honey yellow ; the back, the shoulders, and the breast, brownish black, with large cream-coloured spots ; belly, deep black, barred with pale chesnut. Under tail-coverts bright chesnut, towards their bases barred with black. Tail, blackish brown, with partial bars of light cream-yellow, and all except the two middle feathers, tipped with pale reddish orange. Length  $11\frac{3}{4}$  inches.

This bird was first discovered in latitude  $25^{\circ} 40'$ , about eighty miles to the eastward of Latakoo, and it was when we remarked its cry to differ from that uttered by *Pterocles Tachyptes*, Temm. that we were led to a suspicion of its being a distinct species. In common with the other South African species of this genus, it repairs in large flocks at regular and fixed periods, to localities where water exists, and it is at such times that specimens are most readily to be secured. The sportsman, however, to be successful, must be quick in his movements, as they scarcely reach the water before they are again on the wing. Both in approaching to, and receding from such spots, they utter almost incessantly sharp cries, somewhat resembling *twet weet, twet weet*. From observing these birds when in quest of means for quenching their thirst, one would be disposed to consider them gregarious ; but such notions are soon suspended when their feeding grounds are discovered. Over the latter they are generally dispersed singly or in pairs, and the occasional congregation only takes place by solitary individuals successively joining others who are on the way from a greater distance. This species seeks the water about ten in the morning and three in the afternoon, and in that respect resembles the *Pterocles Tachyptes*, which inhabits a different part of the country. The *Pterocles Variegatus*, which we shall hereafter figure, prefers to drink during the early part of the morning, and the *Pterocles Bicinctus* again, during the dusk of the evening, and the early part of the night. In such an arrangement we must admit design ; as, were all of the various species to experience thirst at or about the same time, both delay and difficulty would be experienced in quenching it, since owing to the general scarcity of water in the districts they inhabit, even as it is at present, hundreds of the same species are often to be seen fringing the brink of a pool for hours together, and occasionally disputing for the first sip. Grass-seeds, ants, and abundance of gravel were found in the stomachs of most of the individuals we secured.





OTIS RUFICRISTA  
(Aves.—Plate 4)

*By K. Haghe Lith'd to the Queen*





## OTIS RUFICRISTA.—SMITH.

### AVES.—PLATE IV. (MALE.)

*Mas. O.* capite supra cæruleo-griseo; fasciâ suborbitali colloque griseis, pallidè brunneo sparsis; striâ superciliari sordidè albâ, nigro variegatâ usque ad nucham porrectâ; cristâ castaneâ; mento, regione paroticâ, maculâque ante alas albis, illo fasciâ longitudinali nigrâ; dorso isabellino lineis nigris undatis, variegatis; scapularibus, interscapularibus, humerisque præterea maculis lanceolatis nigris notatis flavo-albo marginatis; alarum tectricibus secundariis apicibus albis, tectricibus primariis, remiibusque nigro-brunneis, albo maculatis; pectore ventreque nigris; oculis rubro-brunneis; pedibus albo-flavis; mandibulâ superiore unguibusque viridi-nigris, mandibulâ inferiore ad basin subflavâ ad apicem livida.

OTIS RUFICRISTA, Rep. of Exped. App. page 56, June 1836.

**COLOUR.**—The upper surface of the head intermediate between bluish and blackish grey; a stripe below each eye, and the neck pearl-grey, the latter closely freckled with wood-brown, except at the lower part of the throat, where the colour is pure pearl-grey, with a lilac blush; eyebrows rusty white, finely mottled with black, and continued on each side of the head until they unite on the nape, immediately over the crest; the latter pale chesnut, darkest towards the point; ear coverts wood-brown; chin and a blotch on each side of the breast in front of wings white, the former divided along its centre by a narrow black stripe broadest behind. Back, shoulders, scapulars, and tertiary quill feathers, between ochre and cream-yellow; all the feathers finely variegated by numerous waved, somewhat transverse black lines, and all except those of the back marked besides, by lanceolate black stripes edged and tipped with cream-yellow. The secondary wing coverts black towards their quills, white towards their tips; the last colour so disposed as to form an oblique white band along the wing. Primary quill coverts and quill feathers, brownish black with transverse white blotches; tail coverts and tail feathers, white, closely barred by fine black lines, the lateral feathers broadly tipped with pure black, the two middle ones crossed near their extremities by a pure black band, which behind is edged with white, the inner vanes of these two feathers black at the points, the outer vanes black, with transverse white lines. The breast, belly and under tail coverts, black. Upper mandible and claws of a dark horn-colour; the lower mandible greenish yellow towards

# OTIS RUFICRISTA.

the base, dark horn coloured towards the point ; legs intermediate between pale straw and wine-yellow ; eyes reddish brown.

FORM.—Neck long ; body slender ; nuchal crest about two inches long, depressed and formed of fine silky feathers ; wings, when closed, extend over the first half of the tail ; the innermost tertiaries longer than the primary quill feathers ;—the second, third, and forth primaries nearly of equal length ; the first rather shorter. The tail rounded at its extremity ; outer and inner toes nearly of equal length.

## DIMENSIONS.

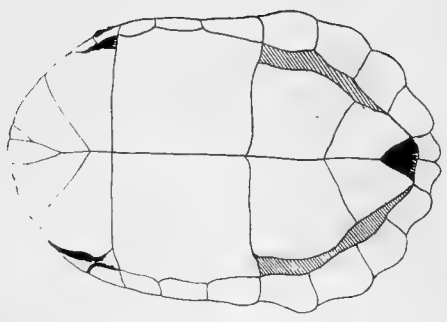
	Inches.		Inches.	Lines.
Length from the point of the bill to the		Length of the tarsus .....	3	9
tip of the tail .....	22	of the outer toe.....	0	8
of the tail .....	5½	of the middle toe .....	1	0
of the wings when folded .....	10¾	of the inner toe.....	0	6
of the bill .....	2			

The *female* differs so much from the male, that we shall give a figure and description of her in a future number.

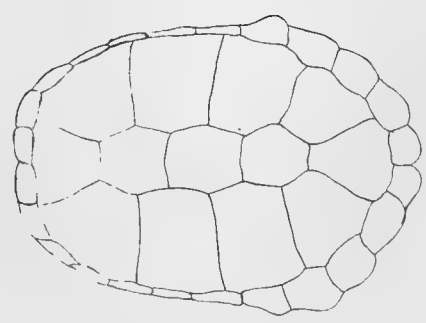
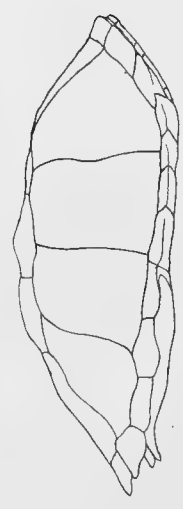
This species was first discovered in the vicinity of Latakoo, where it arrested our attention by the peculiarity of its cry, which was intermediate between the harsh *kir kir kac*, of the *Otis Afra*, Lin. and the croak of the *Otis Vigorsi* Smith. Besides the difference in the tone of its cry, it also uttered its calls less frequently than the former, and, as far as we observed, only while flying ; thus in the first peculiarity approaching the latter mentioned species, and in the other differing from both. When disturbed, it flies but a short distance before it alights, and when that has once happened, it is no easy task to start it a second time, owing to its habit of squatting among the grass, and remaining tranquil even when almost touched by the feet of the sportsman. It appeared almost exclusively restricted to grassy plains, and rarely occurred in districts supplied with brushwood, from which circumstance only one or two specimens were observed to the north of 25°. Insects, small lizards, scolopendra, &c, seemed to constitute its favourite food, and besides the remains of these, abundance of small gravel was also found in the stomachs of the individuals we procured, which were but few, owing to the specimens being rare, at least in the directions in which we travelled.







*Prof. E. H. Hager, Little's to the present.*



STERNOTHERUS SINUATUS.

Reptilia. — Plate I.





## STERNOTHERUS SINUATUS.—SMITH.

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### REPTILIA.—PLATE I. (MALE.)

S. capite pallidè stramineo-brunneo marmorato; capitis lateribus viridi-flavis; collo livido-brunneo pedibus stramineis maculis brunneis variegatis; testâ suprâ viridi-brunneâ, subtus aurantiâ, rubri-brunneo marginatâ; unguibus rubri-brunneis; mandibulâ superiori apice emarginato; inferiori apice acuminato, sursum productâ.

**COLOUR.**—Head above pale straw-yellow, finely marbled with brown lines; sides of head and lower jaw, greenish-yellow; neck livid brown; legs intermediate between wine and straw-yellow; nails reddish brown, occasionally inclined to yellow. Shell above dark greenish brown, the colour deepest towards the margin; the vertebral and the upper extremities of the costal plates tinted with livid grey; sternum, pale orange, variegated towards its edges with deep reddish brown, the latter colour most abundant upon the gular, the intergular, the anal, and the lateral parts of the abdominal plates; outer sides of upper and under jaws dark brown, with fine reddish brown vertical lines. Eyes straw-yellow.

**FORM, &c.**—Shell oblong, convex, and rather high; margin ovate, and broadest behind, where it is more or less sinuated. The second and third vertebral plates nearly horizontal and six-sided, the anterior edge of each narrower than the posterior; the fourth somewhat six-sided, the anterior edge broader than the posterior; the first somewhat four-sided, the anterior edge much broader than the posterior, and each of its angles sometimes produced so as to form on each side a triangular projection between the first costal and the anterior marginal plates; near the centre of the anterior edge of this plate is another triangular projection which enters between the two foremost marginal plates; the posterior dorsal plate somewhat of the same form as the anterior one, only narrower; the third and fourth plates with a central elevation towards their hinder margins. Costal plates higher than broad, four-sided, the first of these where it is in contact with the marginal plates very wide, which gives it a somewhat triangular appearance. Marginal plates twenty-four: the first, second, third, fourth, ninth, tenth, eleventh, and twelfth, four-sided, the fifth, sixth, seventh, and eighth, more or less five-sided, and on the anterior side of each at the very margin of the shell is a small triangular process, which is received into a corresponding cavity in the hinder edge of the scale immediately in front of it; margin between the fore and hinder legs obtuse, elsewhere thin and sharp. Sternum semicircular in front, deeply emarginate behind; a transverse joint between pectoral and abdominal plates; gular plates small and triangular;

# STERNOTHERUS SINUATUS.

intergular plate five-sided; brachial plates rhomboidal; pectoral plates at their commissure with each other narrow, the posterior edges straight, the anterior oblique, owing to which circumstance the outer sides are much wider than the inner; anal plates triangular. Head broad and depressed; nose short and rounded; the fronto-nasal plates forming a portion of the hinder edges of the orbits; the frontal plate very large and inclined to six-sided; the parietal plates oblong, and broadest in front; the post-orbital plate small and oval. The apex of upper mandible emarginate with an obtuse tooth-like process on each side of the emargination; the tip of the lower mandible produced and directed upwards; under the chin two minute barbels. Neck and legs sparingly covered by small scales; the hinder edge of each fore leg towards the toes with a broad fringe of thin delicate plates; the toes short and armed with strong claws nearly straight and slightly concave below. The posterior edges of the hinder feet also with a continuous fringe of thin scales, the outermost toe rudimentary, the second and innermost nearly of equal length, and shorter than the third and fourth. Tail rather long, pointed and somewhat cylindrical.

## DIMENSIONS.

	Inches.	Lines.		Inches.	Lines.
Length from nose to hinder margin of			Breadth of shell across femoral plates...	9	3
shell .....	19	0	Length of tail.....	2	5
of head and neck .....	5	6	of sternum from anterior to		
of shell .....	14	5	hinder edge .....	13	3
Height of shell .....	5	3			

The colours in the *female* are nearly similar to those of the male. In both sexes the head, neck, and anterior extremities, when retracted, are completely protected by the anterior portion of the sternum, which by means of the joint in front of the abdominal plates is closely applied to the anterior margin of the upper shell. The principal differences between this species and *Sternotherus ater* and *S. castaneus* will be found in the general form of the shell, the shape of the plates, and the structure of the tip of the upper mandible.

The first specimens of this tortoise were discovered in rivers to the north of 25° south latitude, and in situations only where the water was very deep. They were usually observed during the heat of the day lying upon rocks which projected above the surface of the water, and were so vigilant that it was almost impossible to approach them within a moderate distance, before they vanished. Many of them were struck by musket balls, yet no wounds which were thus inflicted ever appeared to impede their movements. At last, by means of hooks baited with flesh we succeeded in obtaining a few specimens, though against such means they were also guarded; for even where individuals existed in abundance, perhaps not one could be secured by four or five fishermen, after spending many hours in the pursuit. Between 24° and 25° they occurred in greatest abundance, probably from the circumstance that between those parallels the pools were deepest; to the north of the former parallel they appeared to be scarce, owing no doubt to the channels of the streams being there loaded with gravel and sand.





VARANUS ALBOGULARIS.  
(Reptilia—Plate 2.)

*Day & Haghe Lith<sup>rs</sup> to the Queen.*







## VARANUS ALBOGULARIS.—DAUD.

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### REPTILIA.—PLATE II. (MALE.)

V. capite quadrangulâri, versus apicem attenuato; naribus obliquis angustis propè oculos positis; collo corporeque obesis; pedibus validis; caudâ versus basin subcylindricâ dein compressâ, supra carinatâ; capite colloque, subochreis brunneo-maculatis; fasciâ brunneâ ab oculo ad dorsum; corpore supra brunneo, fasciis, maculis lineisque subochreis variegatis, subtus subochreo, guttis brunneis sparso; caudâ fasciis brunneis subochreisque alternantibus fasciata.

VARANUS GILLII—*Smith*, South African Quarterly Journal, 1831.

COLOUR.—Head and neck intermediate between gamboge and ochre-yellow, the former and the sides and back of the neck finely freckled by small black spots; from the outer corner of each eye, a brown stripe extends along the neck, and terminates on the back immediately behind the base of the fore leg, where it is much broader than at its commencement; this stripe is generally darkest at its edge and lightest along its centre: between the terminations of these stripes there are in most specimens two large brown blotches separated from each other by a yellowish line. Back brown, crossed by three or four ochry yellow bands, which are, either in the form of continuous stripes or interrupted blotches, and is besides variegated by smaller spots, or waved narrow stripes of the same colour; the larger bands and blotches sprinkled with small brown spots. The sides ochry yellow with small brown spots and vertical stripes, the latter continued from the brown of the back; belly the same colour as the sides, with a sprinkling of small brown spots. Tail beneath ochry yellow; above and on the sides marked by alternate brown and yellow bands, the former spotted with yellow, the latter with brown. The outer surface of anterior extremities ochry yellow, spotted with brown; the posterior extremities dark brown, spotted with ochry yellow; toes, the latter colour, with some indistinct brownish bars; nails dark horn-coloured.

FORM, &c.—Head rather small; neck and body robust and rather flattened; limbs thick and strong. The head is quadrangular, rather short, broad behind, and tapered towards the nose; nostrils oblique, linear, and situated near to the eyes; teeth somewhat cylindrical and strong, obtuse in some specimens, pointed in others; external ear, transverse and narrow; tail somewhat cylindrical towards the base, the remainder compressed above and surmounted by a distinct serrated carina with a slight channel along its upper surface; towards the tip of the tail this carina almost disappears. Upper surface of the head covered by flat somewhat circular scales, rather small, particularly over the eyes; lips and temples covered with small scales, on the

# VARANUS ALBOGULARIS.

former oval, on the latter circular. On the nape and upper part of the neck the scales of a larger size than on any other part of the animal, and are besides more raised, with the granulations surrounding the discs very distinct. On the back and sides, the scales are disposed in waved transverse bands, and only differ from those of the neck in being of smaller size and less convex; on the tail they are arranged in regular rings; towards its base oval, and more or less completely margined by granulations; towards the tip oblong, subcarinated and almost without any edging. On the chin, throat, and sides of the neck, the scales are small and oval; on the breast somewhat circular, on the belly oval, in transverse rows, and only margined behind by granulations; on the outer and anterior sides of the limbs towards the body, they are oblong; towards the toes somewhat circular; all surrounded by granulations; on the inner sides again they are smaller and nearly circular. The inner toe of hinder foot very short and robust; the outer one much removed from the rest; on the fore foot the inner toe is shorter than any of the others, but longer than the corresponding one of the hinder foot.

## DIMENSIONS.

	Feet. Inches.			Inches. Lines.	
Length from the nose to the tip of			Distance between the fore and the		
the tail .....	2	8*	hinder legs .....	0	7
of the tail.....	1	6	Length of the fore legs to the apex of		
from nose to base of fore			the nail of the longest toe...	4	9
legs .....	0	5½	of the hinder leg to ditto.....	5	6

The *female*, as regards external appearances, differs but little from the male.

Though no specimens of this species were obtained south of Latakoo, yet there is reason to believe it occasionally occurs within the limits of the Cape Colony; it is, in all probability, the animal which is called the *Das adder* by the colonists, and which is so much dreaded under an idea of its being extremely venomous. It is usually discovered in rocky precipices, or on low stony hills, and when surprised seeks concealment in the chinks of the former, or in the irregular cavities of the latter; and when any inequalities exist upon the surface of the rocks or stones, it clasps them so firmly with its toes, that it becomes a task of no small difficulty to dislodge it, even though it can be easily reached. Under such circumstances, the strength of no one man is able to withdraw a full-grown individual; and I have seen two persons required to pull a specimen out of a position it had attained, even with the assistance of a rope fixed in front of its hinder legs. The moment it was dislodged it flew with fury at its enemies, who by flight only saved themselves from being bitten. After it was killed, it was discovered that the points of all the nails had been broken previously, or at the moment it lost its hold. It feeds upon frogs, crabs, and small quadrupeds; and from its partiality to the two former, it is often found among rocks near to springs or running streams, which fact having been observed by the natives, has led them to regard it as sacred, and not to be injured without a danger of drought.

\* Specimens are occasionally obtained, which measure between four and five feet.





GEOPHIS VARIOS  
 Geophis — Plate 3.







## BUCEPHALUS VIRIDIS.—SMITH.

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### REPTILIA.—PLATE III.—(MALE.)

*B. pallidè viridis*; oculis brunneis; scutis abdominalibus 181; scutis subcaudalibus serie duplici collocatis circiter 101.

**COLOUR.**—Light grass-green, the abdominal plates with a slightly livid tint; eyes dark brown.

**FORM, &c.**—Head moderately elongated, distinctly quadrangular and broader than the neck; nose slightly rounded; nostrils small, nearly circular, and directed outwards and backwards; eyes large, and situated rather nearer to the tip of the nose than the angle of the mouth; gape wide; upper lip with seven plates on each side, lower with ten. Nasal plate triangular, apex directed backwards; anterior frontal plates two, somewhat triangular; posterior frontal plates large quadrangular, the outer posterior angle rounded; vertical plate triangular, the apex behind, rounded; occipital plates large, irregular and narrow behind; palpebral plates somewhat six-sided, the two middle sides longest. Gular plates large, two in each row. The posterior or mobile and grooved teeth of maxilla, eight on each side, from two to three lines in length, and slightly curved; four of each group placed for immediate use, the rest recumbent between those and the inner portion of the spongy sheath which envelopes the whole; the fixed or anterior teeth of maxilla small and slightly curved, their points directed backwards; those of the palatal arches and lower jaw somewhat similar. Body gradually increasing in size till near the middle, from thence it tapers to the point of the tail, which is armed with a horny aculeus; the figure of body and tail subcylindrical, slightly flattened below. Skin as far as the tail loose, and only slightly connected with the subjacent parts by a delicate cellular membrane; towards the head superabundant, and forming on each side of the neck a longitudinal fold, which disappears when the gullet is distended. On the tail the skin is firmly connected to the parts beneath. Scales immediately behind occipital plates short, broad, and imbricate; from those to the base of the tail they are disposed in slightly waved transverse bands, each of which bands includes scales of several different forms; the one immediately on the centre of the back is narrow towards the base, broad and semilunar at the

## BUCEPHALUS VIRIDIS.

extremity, with a faint carina along its centre, the lateral ones oblong, each with an obtuse angular or semilunar point, and a carina extending from the base, and terminating on the upper edge of the scale before reaching its apex ; the two scales of each row nearest to the abdominal plates broad and subtriangular, the points rounded, and the longitudinal carina with which each is marked terminates on its lower edge behind its point. The scales on the tail are short, broad, distinctly imbricate, and somewhat five-sided, characters which they retain to its extremity ; abdominal plates, 181 ; sub-caudal scales, 101 in each row.

Unless when the skin is distended, the scales of the transverse rows overlap each other so much, that only the inner edge of each is left uncovered ; at such times the scales appear linear.

### DIMENSIONS.

	Feet.	Inches.
Length from the tip of the nose to the extremity of the tail...	4	9
Length of the tail.....	1	2
Circumference of the thickest part of the body .....	0	3

The only specimen of this species which we obtained was found near to Old Latakoo, and at the time of its discovery was in a half torpid state, and coiled up among some dry grass which was interweaved with the slender branches of a small shrub. According to the natives, it ascends trees to rob the nests of birds, and its occurrence is by no means rare in that country during the summer season. Although a celebrated Herpetologist has expressed his belief\* that snakes with the general characters of the species just described, ought to be retained in his genus *Dendrophis*, yet it appears to me that their position in it would be equally inappropriate, as it would be in the restricted genus *Coluber*. Besides the species now described, there are at least four others inhabiting South Africa ; and though they have been regarded by the author just alluded to as only varieties of one species, nevertheless, I am more convinced at present than when I submitted descriptions of them to the public,† that each ought to be regarded as distinct from the others. Supposing *Bucephalus typicus*, *Bellii*, *gutturalis* and *Jardinii*, to be only varieties of one species, how are we to explain the circumstances of their being all found in a similar climate and in similar descriptions of country, yet, nevertheless, in very different localities, and each propagating individuals like itself, which as far as we know never vary. In proportion as our knowledge of the more intricate details in the scheme of nature becomes extended, it will probably be discovered that each genus is regulated to a certain extent upon a plan peculiar to itself, and that in some genera the distribution of colours, not less than the peculiar tints, will furnish excellent specific distinctions. As regards *Bucephalus*, I feel disposed to consider it one of such genera.

\* *Physionomie des Serpens* par H. Schlegel, page 238. Hague, 1837.

† *Zoological Journal*, Vol. iv. page 441, May 1829.





*From the collection of the Queen*

ECHINORHINUS OBESUS  
(Fishes — Plate I)





## ECHINORHINUS OBESUS.—SMITH.

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### PISCES.—PLATE I. (MALE.)

*E. obesus*; capite supra, dorsoque ad pinnam primam plumbeis; dorsi partibus posterioribus, corporis lateribus, abdomineque cupreo-flavis, purpureo brunneoque umbratis; mento, nasi lateribus, maculâque pone oculos albis; oculis cupreo-viridibus.

**COLOUR.**—The head and back, as far as the first dorsal fin, dark leaden grey; the rest of the back, the sides and the belly, pale coppery yellow clouded with purple and brownish tints; and the belly besides is marked with blotches of light vermillion red; the fins towards their bases reddish brown tinged with dull grey, towards their extremities a lighter shade of the same colour; chin, sides of muzzle, and sometimes a spot behind the eye, dull white; eyes, coppery green.

**FORM, &c.**—Body very thick in proportion to its length, with only a slight diminution in size towards the tail; the back in front of the first dorsal fin nearly straight; the head flat above, and slightly sloping to the muzzle, which is rounded; nostrils transverse, and each partially divided by a narrow membranous lobule, which projects backwards from its anterior margin; their position is nearly over the most projecting or central portion of the upper jaw, considerably nearer to the eyes than the tip of the snout, and about half way between the latter and the angle of the mouth. Eyes, rather nearer to a line raised from the angle of the mouth than to the nostrils; pupil, circular and small; postocular spiracle, scarcely visible. Gape, wide and arched, having at each corner a triangular fold of skin formed by the union of the upper and lower lips. Teeth regularly placed upon each jaw, only one row in use at a time, the rest reclined; they are large, compressed, and somewhat quadrangular, the cutting edges nearly horizontal, and both of their sides are generally bicuspidate, (as will be seen by referring to the figures *a* and *b*, where the former represent the teeth of the upper jaw, and the latter represent those of the lower). Branchial openings all in front of pectoral fins; the first not much more than half the length of the fifth. Pectoral fins rather small, the hinder edges nearly square; the dorsal fins are small, the first narrower at its base than at its extremity, which is slightly rounded; the second nearly throughout of equal breadth, the hinder edge almost

# ECHINORHINUS OBESUS.

square ; the ventral fins short, broader behind than at their bases, and their posterior edges slightly undulated ; the caudal fin entire, somewhat triangular and slightly falciform, the upper portion high above the line of the back, the lower scarcely below the line of the body immediately in front of it. Lateral line very distinct, commencing above branchial openings, and extending nearly without curve or undulation to the commencement of the caudal fin, from thence it ascends the latter, and extends along it, nearer to its anterior than posterior edge, until it reaches its upper extremity ; at its origin this line is nearer to the middle of the back than the base of the pectoral fin ; to the touch it feels slightly rough, which arises from its being beset with a number of minute prickles, which are most distinctly seen in preserved specimens. The surface of the skin both on the body and fins is more or less sprinkled with strong bony-looking spines, with large circular and flattened bases, which are striated from the centre towards the circumference. These spines vary in size as well as form, some being hooked, others quite straight ; in some places they are disposed in clusters, in others they are solitary, and on the extremity of the muzzle are nearly wanting. The appendages to the ventral fins in the male seldom extend much beyond their posterior margins.

## DIMENSIONS.

	Feet. Inches.			Feet. Inches.	
Length from the tip of the nose			Distance between the dorsal fins .....	0	4 $\frac{1}{4}$
to the end of the caudal fin	6	6 $\frac{1}{2}$	Length from the hinder edge of the		
to the eye .....	0	6 $\frac{1}{2}$	second dorsal fin to the base		
to the first dorsal fin.....	3	9 $\frac{1}{2}$	of the caudal fin .....	0	4
to the pectoral fins .....	1	6 $\frac{1}{2}$	of the tail from the base to the		
to the anterior edge of the			highest point.....	1	5 $\frac{1}{2}$
upper jaw.....	0	6			
to the base of the ventral fins	3	7 $\frac{1}{2}$			

This shark is comparatively rare at the Cape of Good Hope. It is described by the fishermen as sluggish and unwieldy in its movements, and but seldom to be observed towards the surface of the water. When they obtain specimens, it is generally at a time when they are fishing in deep water, and when the bait with which the hooks are armed is near to the bottom. In this respect it resembles the *Scyllia*, or ground-sharks ; and, if we were to regard only its internal organization, we should be disposed to consider it as closely allied to that genus.



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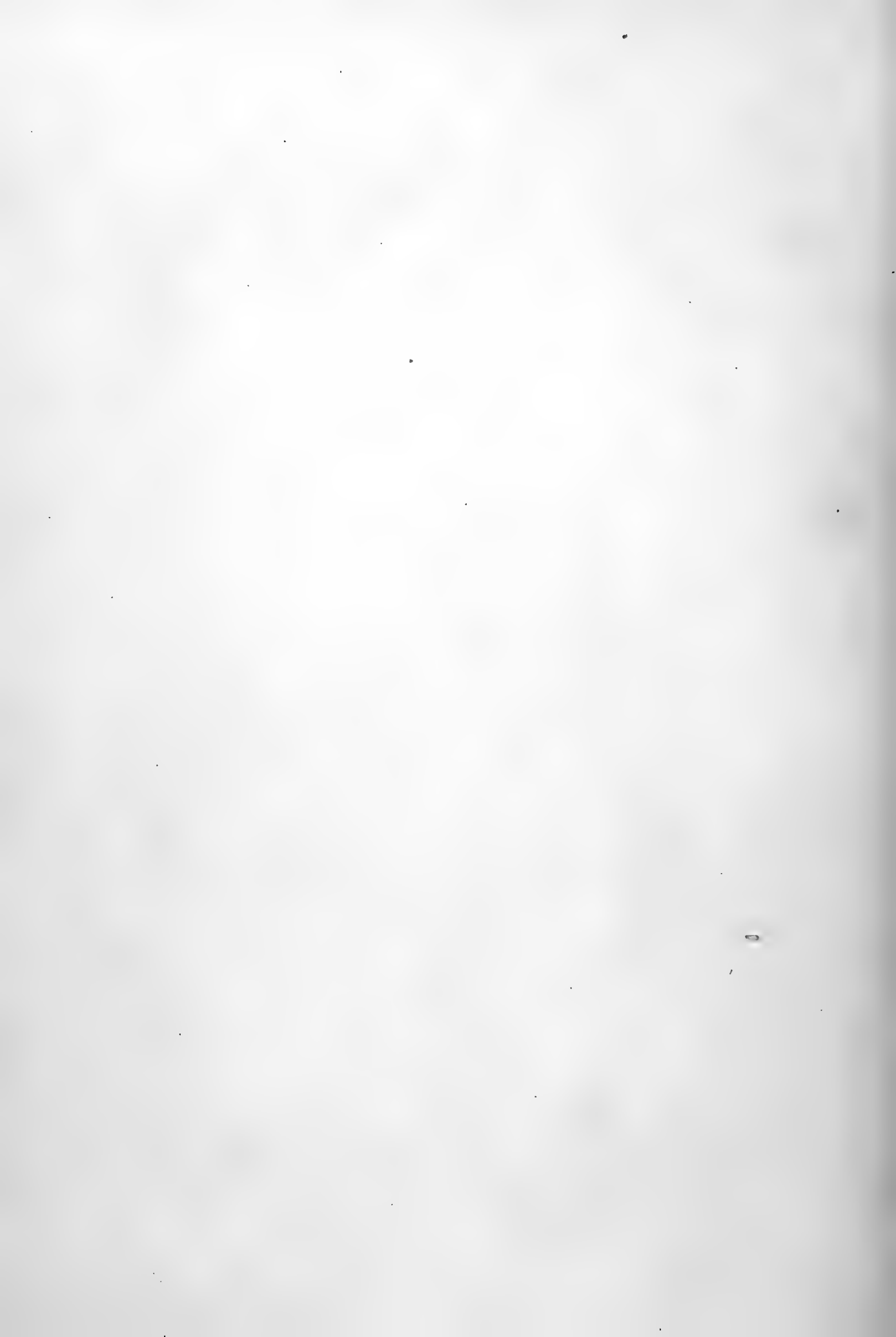
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